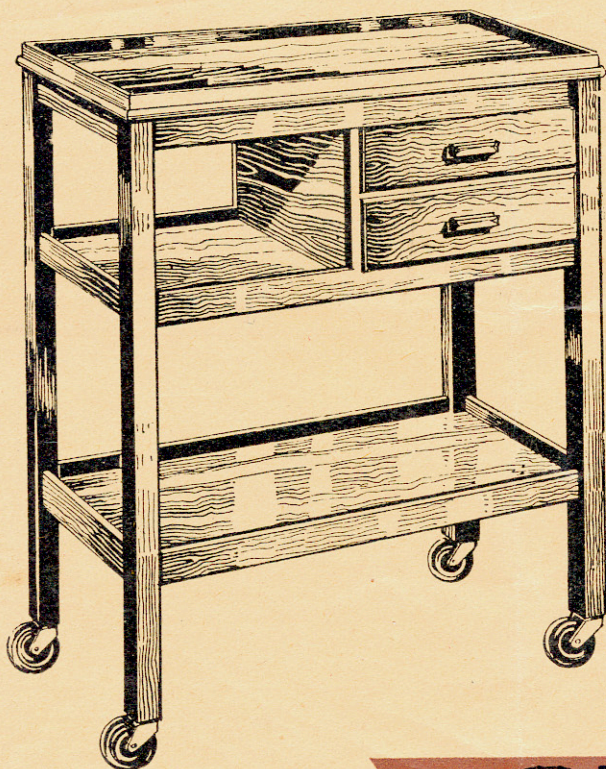


Hobbies

WEEKLY



DESIGN FOR
MAKING THIS
**PRACTICAL
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WAGON**
FREE INSIDE

And articles on
ELECTRICITY
METAL WORK
PUPPETS
PHILATELY, Etc.

November 6th. 1937

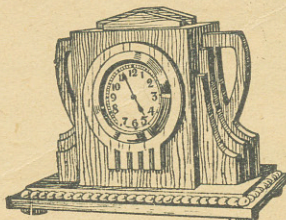
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Vol. 85. No. 2194

**THE FRETWORKER'S AND
HOME CRAFTSMAN'S JOURNAL**

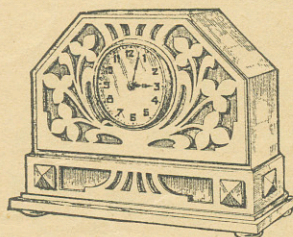
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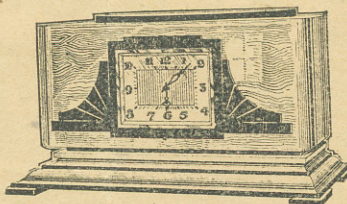


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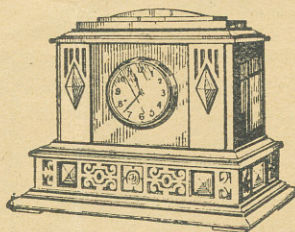
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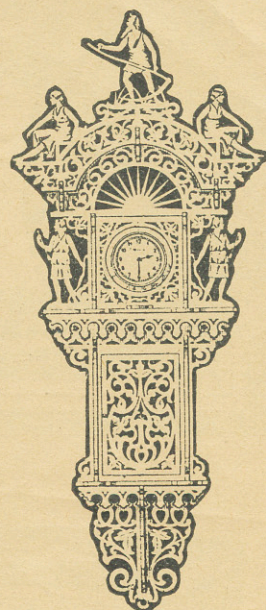
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$\frac{1}{8}$ in.	48 in. x 24 in. (8 sq. ft.)	...	Price	2/6
	24 in. x 24 in. (4 sq. ft.)	...	"	1/4

Special sizes at 4½d. per sq. ft.

These panels are too large for parcel post and are sent carriage forward.

$\frac{3}{16}$ in.	60 in. x 48 in. (20 sq. ft.)	...	Price	6/6
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	24 in. x 12 in. (2 sq. ft.)	...	"	8d.
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$\frac{3}{16}$ in. OAK VENESTA

Plywood you will be proud to use. It has a veneer of nicely grained Oak. The 20 in. x 14 in. panel is a useful size for tray making.

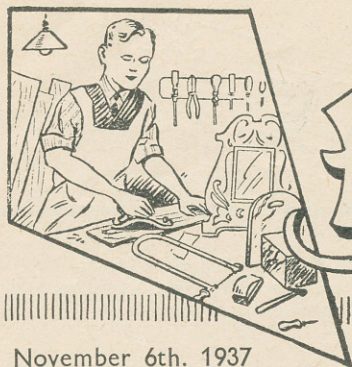
10 in. x 9 in. (about ¾ sq. ft.)	...	Price	8d.
20 in. x 14 in. (about 2 sq. ft.)	...	"	1/11

POSTAGE 10 in. x 9 in. panels—1 for 5d.; 5 for 6d.; 8 for 9d.; 20 for 1/-; 20 in. x 14 in. panels—1 or 2 for 6d.; 9 for 1/-.

$\frac{3}{16}$ in. MAHOGANY VENESTA

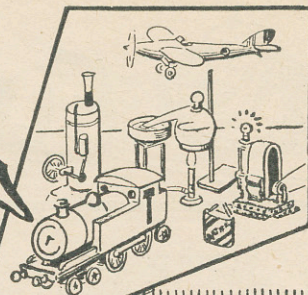
10 in. x 9 in. (about ¾ sq. ft.)	...	Price	9d.
20 in. x 14 in. (about 2 sq. ft.)	...	"	2/3

POSTAGE 10 in. x 9 in. panels—1 for 5d.; 5 for 6d.; 8 for 9d.; 20 for 1/-; 20 in. x 14 in. panels—1 or 2 for 6d.; 9 for 1/-.



Hobbies

WEEKLY



November 6th. 1937

Vol. 85. No. 2194

AS promised, this week marks the first of a short series on Marionette and Glove Puppet Shows. These quaint miniature theatricals are fast becoming increasingly popular, and I know very many readers will be interested in trying them out. We shall deal with all necessary materials and arrangements and commence this week with the first essential—the stage. Other details will follow in time for you to get up something good for a Christmas entertainment.

NO doubt many of you have begun making up the Home Cinema patterns given last week, and I had hoped to give you the completion of it with this issue. Unfortunately, I could not find room when all the other good articles had been put in. In consequence, the remaining patterns and particulars must be held over until next week. So be sure to get your copy early—to avoid disappointment.

ANOTHER point making next week's issue worth having, is the making of a Piano Dulcimer. One of those models, you know, like a tiny piano on which you can play a tune by striking the miniature keys. A splendid toy to make for Christmas.

BY the way, I must say a word or two about the Hints and Tips page. The entries you send in should be for some gadget you have used yourself, or for some little tip you discovered in your work. It is not fair, to say the least of it, to copy something out of another book and send it along to me as something you have found out. Besides you have no right to copy things out and claim them as your own. What would you say if I merely copied the complete articles in these pages from somewhere else? So I want only your own original tips please!

OUR Scout Notes, which usually appear the first

issue of each month, are unavoidably held over until next week, when they, and another competition, will definitely appear.

THE Warden of the Boys' Club at Ivy Arch Rd., Worthing, which is run under the auspices of the National Association of Boys' Clubs, tells me they have started a Handicraft Section and the lads are quite keen about fretwork and woodwork. If any other reader living in the district would like to enjoy the amenities of such a Club I am sure the Warden—Mr. L. A. E. McCulloch would be only too pleased to see them.

I NOTICE a revival of interest in Chess, and particularly amongst some schools. Clubs are being formed, pocket sets are being purchased and everyone is frightfully keen. The game is originally attributed to India, and it was known in Persia in the 6th century although we poor unenlightened Europeans did not know of it until several hundred years later. The game is very involved with an enormous number of intricate progressive moves. The necessary "men" number 32 and are sometimes beautifully carved and shaped.

THE point is, however, that our readers can easily cut their own from design and details I had in these pages some time ago. A full size set of drawings was given in January 28th, 1933 for making "men" standing on a 1 1/4 in. dia. base. If these happen to be too large

there was another article on the subject with the outlines "squared up" so you could enlarge them to whatever size you wished. This was dated February 27th, 1937, and if either of these is of interest I can send the back number along for 3d. post free. Of course, if there is the demand I will have another set printed in these pages. Perhaps those interested will write about it.

The Editor

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Next Week's Gift Design—Pedestal Bracket

Correspondence should be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk, and a stamp enclosed with the Reply Coupon from Cover iii if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc., are on cover iii.



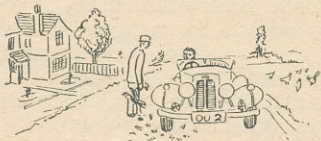
FUN AND PUZZLE



WORTH DOUBLE

Motorist—"I'm very sorry I ran over your hen. Would half a crown make it right?"

Farmer—"Well, better make it two. I have a rooster that was mighty fond of that hen, and the shock might kill him, too."

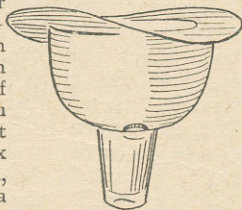


ONE AND A HALF

If a cat and a half kills a rat and a half in a day and a half, how long will it take a dozen cats to kill a dozen rats? Try and work it out, then see Col. 3 if you are correct.

THROUGH THE HAT!

CAN you get a penny through a hat? Here is how! You borrow a penny and have ready five other pennies, explaining to your friends that you are going to throw a penny through a hat into a glass tumbler. You then borrow an ordinary bowler hat, and place it on the floor of your platform, crown downwards on the mouth of the glass. You now exhibit the six pennies, and, standing a few feet from the hat, you throw them into it, and behold one of them goes through and falls into the bottom of the glass with a merry chink.



This is how it is done. When you borrow the hat you slide a penny down until it is held in position between the rim of the glass and the crown of the hat. The greater part of the penny should be in the glass. You keep this side of the glass towards the back of the platform. Now, if you throw the remaining five pennies into the hat, the jar caused by the pennies falling into the hat will cause the other penny to fall into the glass.

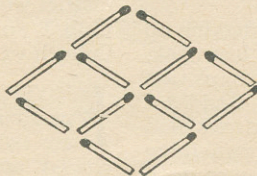
ARITHMETIC

What is the difference between twice thirty-five and twice five and thirty?

Twice 35 is 70 and twice 5 and thirty is 10 plus 30 or 40. The difference accordingly is thirty.

A MATCH TRICK

This puzzle is a combination of diamonds and triangles. Twelve matchsticks are laid upon the table in the form of four diamonds as shown in the drawing. You are now required to rearrange the twelve matchsticks in order to make six



triangles. All the twelve matchsticks must be used and none of them may be broken. All the triangles must be of equal size. If you cannot solve it, look at the drawing in the third column.

NOT PARTICULAR

Diner—"You've got your jacket in my fruit salad!"

Waiter—"S'all right, sir, it's an old one; it won't hurt it."

POACHERS ALL!

Minister to Gamekeeper—"I never see you at church now."

Gamekeeper—"Well, I don't want to make your congregation smaller. You see, if I went to church, the rest of the congregation would go poaching."

Why is a lady's jumper like a piece of orange peel?

Because they are both easy to slip on.

Why is a sentinel going his rounds, like a drunken Irishman?

They are both far-rolling.

MUSICAL TINKER

Landlady (to lodger)—"Beg pardon, sir, but I understand as how you are a doctor of music?"

Lodger—"I am, ma'am. Why?"
Landlady—"Well, sir, my Billy has just been and broke his tin whistle. Can you mend it?"

What is that which occurs once in every minute, twice in a moment, but not once in a year?

The letter M.

When does a caterpillar grow good?

When it turns over a new leaf.

What is the difference between a frightened child and a shipwrecked sailor?

One clings to his ma and the other his spar (his pa).

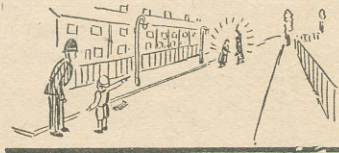
FREEDOM

Prison Visitor (to tramp)—"My good man, is there anything I can do for you outside the prison?"

Tramp—"Yus. I'd be delighted if you could get the Mayor to give me the freedom of the city."

POOR SOUL!

"Quick!" said the little boy running up to the policeman, "you're wanted in Pleasant Street, and bring an ambulance with you. Muvver's found the old lady what pinched our door-mat."



PIG IRON!

"A pig was never known to wash."
"No, but I have seen a pig iron."

When are roads like corpses?

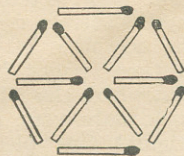
When they are mended (men dead).

Why are sheep of obviously bad character?

The best of them are black legs. They gamble (gambo), they spend most of their time on the turf and

SOLUTIONS

The detail shows how the twelve matchsticks must be arranged in order to form the six triangles.



The answer to the cat and rat question is a day and a half—not eighteen days.

A PRACTICAL SERVICE WAGON

This week's Free
Design Chart

If anyone complains that our design sheet is usually fretwork, let him turn to it this week and see the wonderful piece of home carpentry which it provides. Isn't it a real piece of furniture which you would be glad to have in any home, and which any housewife or maid would find useful every day? Why pay a big price for such an article at a shop when the handyman and home carpenter can make one up in his spare time?

Never previously has the opportunity been provided so helpfully, for here we have not only a complete design showing all the parts, but a parcel of wood containing beech and plywood panels suitable for making the whole thing complete.

As you see, the wagon is built on four strong castors to allow it to travel in any direction with the minimum of effort. It is, unlike the usual open wagon, fitted with two drawers, and these are exceedingly useful for cutlery, napkins, etc.

Details of the cost of the wood and the contents of the parcel supplied are given in the panel herewith.

So, having these in hand, you can get right away on the construction. But before doing so, do make sure you have a good idea of how this construction is

carried out. Study the sheet in conjunction with the various details on it, and those given here.

Notice that each part is distinctly lettered and the name of each part is given in the schedule. In addition, to make things more easy still, each of the pieces of wood in the parcel is also lettered.

In some cases, of course, it has been impossible to give full size parts on the sheet, but the exact dimensions shown can be drawn out on to the actual material.

Carpentry Work

In a piece of work like this it is essential to have absolute correct measurements, and to test out each joint one part with another before actually cutting or making up. The legs, for instance, are mortised to fit the tenons of the rails, and obviously if one of these is cut incorrectly, the rail will not fit or the trays will be thrown out of true. The first job naturally is to get the legs cut the right length, and to have the proper mortises in them. These legs are quite the modern type of $1\frac{1}{4}$ in. square section, and the four of them must be cut to an overall length according to the measurements shown. Then mark them off A and B because each of the four is slightly different.

Marking the Legs

The ones at A as shown on the plan at Fig. 1, are those which come at the open end of the wagon. Those marked B are at the end where the drawers are and must be marked accordingly.

Again, one of those shown as B has a small additional piece cut out of it 5 ins. from the top, and just in front of the mortise. This is $\frac{1}{2}$ in. wide to take the rail along the front. There being no rail at the back, the other leg is left plain so far as this is concerned.

The Rails

All these legs are mortised to take the $\frac{3}{4}$ in. rails, and these are cut out carefully using a brace and bit and finally cleaning up with a chisel. Then get the eight rails which form the edges to the two lower trays. Test them in place in these mortises, and get a rigid joint. Notice that the rails should be $\frac{3}{4}$ in. from the front edge of the leg in each instance.

For the top we have a long rail back and front, with a shorter one between the A legs at one end.

At the other end, at the top, the wide piece is let in by the wide mortise to form the ends of the drawers. These rails along



the top come flush with the top of the legs in order to allow the uppermost tray (or top itself) to lie flat.

The lowest floor (part M) is a piece 25 by 14 and it is supported on ledge fillets (part Q and R), which are glued and can be screwed flush with the under edge. Cut out the corners of the floor and rest it on to these ledges.

The middle floor does not extend right through nor do the ledge pieces themselves. They only extend a portion of the way as shown at Fig. 2.

The Centre Partition

Here, too, we can see how the centre upright partition is supported coming between this short floor and the top. Mark off 12½ ins. from the edge of the floor, and use the upright piece on this.

The front edge of it is covered by an upright rail (K), whilst it is supported on one side by fillet pieces of triangular section. In Fig. 2 can also be seen how the runners and guides for the drawer are made. These are the parts Y and W. The latter is glued to the floor immediately opposite the upright, and Y comes above it.

Similar runners are, of course, added to the inside of the end legs. Cut the rail to fit round the leg, glue it firmly to the end, then put the guide above it. Similar runners and guides are to be fitted for the upper drawer. A front rail is fixed between the two legs by the little notch previously

mentioned, and then the drawer portions fixed between the front and back. These are the runner X and the guide Z, shown in the elevation at Fig. 3.

The Back

Before putting these in, however, we must fix the back to the drawer compartment. This is a plain rectangle of wood stood on the middle rail and fitting between the upright rail K and the end leg. Get a tight fit then glue the runners and guides to it.

These parts can all be tested out temporarily, but should not be finally fitted until the drawers themselves have been made up. The construction of these is shown at Fig. 4.

Notice that the two sides, front and back are glued and screwed to the floor D.D. Notice, too, that this floor extends beyond the sides, which in turn extend beyond the back (B.B.).

Front and Handles

The front edges of the wood are covered by a false front (C.C.) in the centre of which is fitted one of the modern wooden handles No. 238. The upper drawer is slightly smaller than the lower one, and both should slide comfortably along the runners and guides previously mentioned. When put in, it will be found the drawer drops in too far.

To prevent this, small ½ in. blocking pieces must

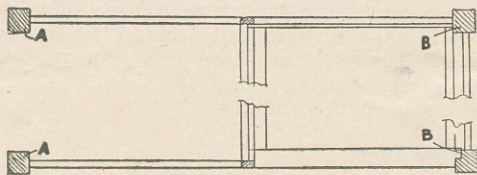


Fig. 1—A plan showing the four legs and long cross rails

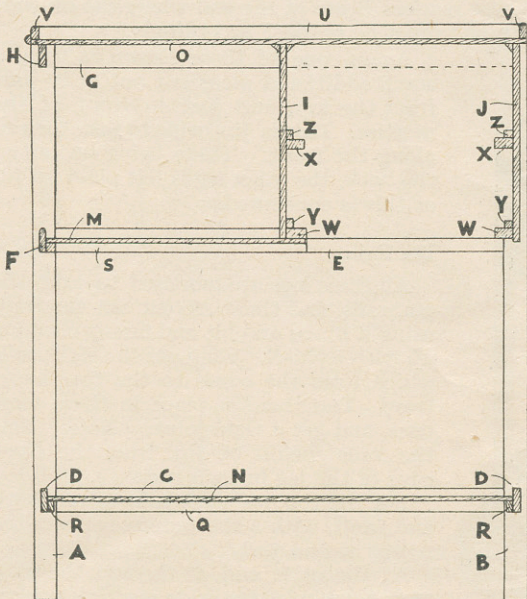


Fig. 3—Side and front section giving lettered parts

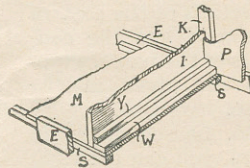


Fig. 2—Cut-away view of centre partition, floor and drawer guides

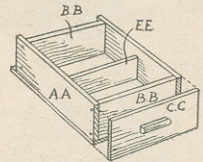


Fig. 4—Construction of drawer

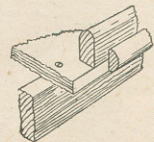
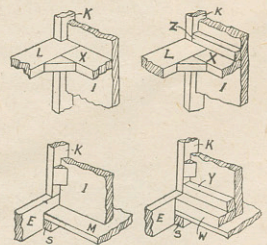


Fig. 5—How top tray is edged

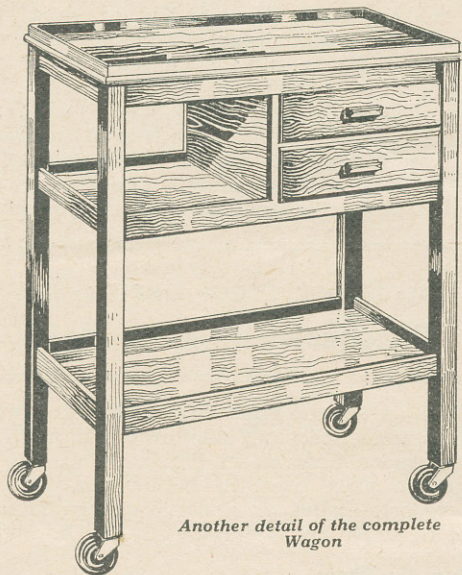


Details looking inside the drawer showing top and bottom guides

be glued to the back end of the runners to get the floor flush with the front rails, leg, etc.

Get these drawers completed, test them in place, and finally fix all the side pieces of runners, drawer compartments, etc. Finally there comes the uppermost piece which is built on in the form of a tray. The piece of plywood concerned is the part O, 26½ by 15½.

On the upper face and flush with the edge is



Another detail of the complete Wagon

stood the edging strip. The top of this is rounded off with glasspaper to make a nice finish, and in addition to glue, screws can be driven up from underneath. Then the join of this edging strip and the plywood top are covered by the half-round beading No. 35 which is glued securely along as can be seen in Fig. 5.

The whole tray is then set down on to the legs, and can be screwed in each corner as well as being fitted with blocking pieces on the underside against the rails.

Castors and Finish

The castors as supplied are ready to slide into the bottom of the legs. Turn the whole thing over and drill a hole the right depth and the same diameter as the spindle piece. Sink this in, then put your castor into place, adding a drop of oil for easy running and prevention of squeaks.

The whole piece of work being in beech, will be a nice colour and grain, and you can either darken it by giving a thorough rubbing of linseed oil or applying some fairly thin stain like Light Oak or Jacobean Oak drawn well out. A coat of hard varnish put over, will sink into the wood, providing a semi-glossy surface without that extreme polish which is so liable to show finger marks in usage.

MATERIALS SUPPLIED

Wood.—For making this Wagon we supply a parcel of Beech and plywood, with sufficient Beading and two shaped handles for drawers for 21/- rail carriage forward.

Fittings.—A set of four 2in. castors (No. 6184) 2/3, or a set of 3in. size (No. 6185) 3/-. Postage 6d. on either if sent separately.

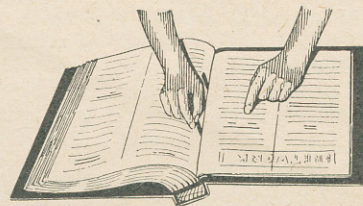
CUTTING LIST

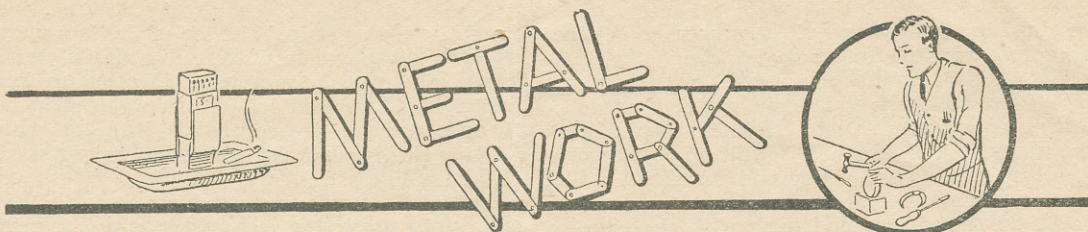
Framework.					
No.					
A	2 Legs — squared to 29ins. long.	M	1 by 1in. by ½in. Mid Floor. 14ins. by 14ins. by ½in. Plywood.	V	2 26½ins. by ½in. Top Edging Strips. 15½ins. by ½in. by ½in.
B	2 Legs — squared to 29ins. long.	N	1 Bottom Floor. 25ins. by 14ins. by ½in. Plywood.	W	2 Drawer Runners. 13ins. by 1in. by ½in.
C	2 Side Rails. 24ins. by 1½ins. by ½in.	O	1 Top Floor. 26½ins. by 15½ins. by ½in. Plywood.	X	2 Drawer Runners. 13ins. by 1in. by ½in.
D	2 Side Rails. 13ins. by 1½ins. by ½in.	P	1 Backing to Drawers. 11ins. by 10ins. by 3/16in. Plywood.	Y	2 Drawer Guides. 13ins. by ½in. by ½in.
E	2 Side Rails. 24ins. by 1½ins. by ½in.	Q	2 Ledge Fillets, Bot. Floor. 24ins. by ½in. by ½in.	Z	2 Drawer Guides. 13ins. by ½in. by ½in.
F	1 Side Rail. 13ins. by 1½ins. by ½in.	R	2 Ledge Fillets, Bot. Floor. 13ins. by ½in. by ½in.	Upper Drawer.	
G	2 Side Rails. 24ins. by 1½ins. by ½in.	S	2 Ledge Fillets, Mid. Floor. 13ins. by ½in. by ½in.	A.A.	2 pieces. 13ins. by 3ins. by ½in.
H	1 Side Rail. 13ins. by 1½ins. by ½in.	T	1 Ledge Fillet, Mid. Floor. 13ins. by ½in. by ½in.	B.B.	2 pieces. 10ins. by 3ins. by ½in.
I	1 Mid Division. 14ins. by 10ins. by ½in.	U	2 Top Edging Strips. 26½ins. by ½in. by ½in.	C.C.	1 piece. 11ins. by 3ins. by ½in.
J	1 End Division. 13ins. by 10ins. by ½in.			D.D.	1 piece. 13ins. by 11ins. by 3/16in. Ply.
K	2 Mid Upright Rails. 8ins. by ½in. by ½in.			E.E.	1 piece. 10ins. by 2ins. by ½in.
L	1 Rail Between Drawers. 11ins.			Beading No. 35.	
				½in. Half-round.	
				2 pieces. 27ins.	
				2 pieces. 16ins.	
				2 Strips ½in. Triangular Fillet.	
				2 Handles No. 238 Oak for drawers.	
				4 Castors 3ins. or 2ins.	

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HOW many readers are there who have not a hobby of some description? Very few we are certain, or they would not be interested enough to read about all the excellent hobbies regularly described in our journal.

Art metalwork is a fascinating kind of work and contrary to general opinion, it can be carried out easily at home without elaborate equipment. Most of the tools you will already have can be used for making the simpler articles and many others can be improvised from scrap.

Metal and Tools

The most useful metals to use are copper and, brass as they are easy to work and can be bought cheaply in sheet form in most hardware and tool shops. The sheets are sold in gauges of various thicknesses but gauges 19 and/or 21 are all you will require at first and for most work. Sometimes small strips and beads are needed but these are bought in lengths very cheaply.

The main tools required are assorted files, metal snips, hammers, an egg shaped plumber's mallet (this can be made by the woodworker) and soldering equipment. A plumber's blow lamp or a soldering blow pipe is very useful when a good heat is required but they can be dispensed with at the start. A few blocks of hardwood will also be needed to shape the work on. We will talk

Let us start our new hobby by making the simple tea caddy spoon as shown in Fig. 1. First, from a piece of 19 gauge copper, cut out the shape with snips as in Fig. 2 and file the edges up true to shape. Now, copper and brass are very hard when bought, so the next job is to anneal or soften the metal. This can be done on the kitchen gas ring or with the blowlamp by making the metal red hot and quenching it into water to cool it. It will now be found to bend any way at will.

A Short New Series on Practical Things to Make

Next, on the end grain of a block of hardwood, such as beech, scoop out a hollow to suit the shape of the spoon body as in Fig. 3. Then lay the copper in place over the hollow and with the egg shaped mallet or a round peined hammer start to strike the copper lightly in the middle.

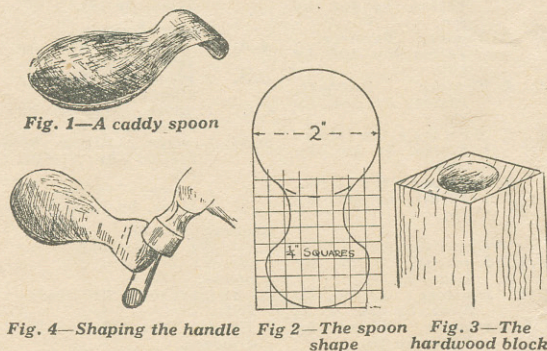
Getting the Shape

Gradually widen the hammer blows in circles from the centre to the edges. It will be found that the copper will begin to stretch to the hollow shape. Do not try to do it too rapidly or unevenly or the metal will buckle and twist out of shape. When the metal begins to feel stiff and hard anneal it again or it may crack.

When the metal has reached the required shape, the surface can be smoothed by a series of light even blows all over with the hammer. If the hammer head is rounder in shape than the hollow, a series of little indentations will be seen but if these are done evenly they look excellent, giving what is known as a "hand hammered" finish to the work. The remainder of the spoon must, of course, be done similarly to match.

The next job is to shape the handle. This can be done with an ordinary carpenter's hammer over a polished rod of iron as in Fig. 4. Start by aiming a series of blows along the edge and work inwards towards the body of the spoon. Make the rows of hammer blows and see that each one overlaps the previous one in order to get a smooth curve. This must be continued until the metal has become the required shape. Any parts that have not been hammered can then be done to make the whole surface look similar. The spoon can be finished by rubbing it vigorously with pumice powder and water and then burnishing with metal polish.

(To be continued)

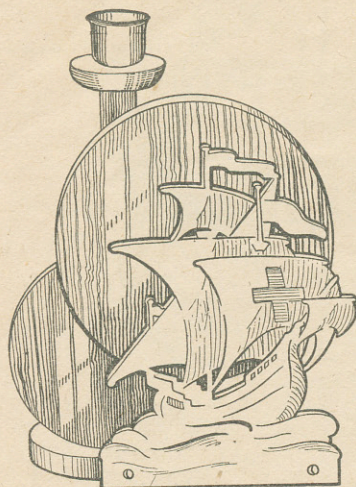


more about the various tools, though, as we need them.

Most metal articles are made from pieces of flat metal and are beaten or raised with hammers to the required shapes.

The skill in it is, of course, to do the work accurately without marking or otherwise spoiling the surface of the metal. It is much easier than it sounds, really.

If you want further particulars of cost of tools, etc., ask the Editor and he will get a firm which supplies them to send you price lists.



AN ORNAMENTAL CANDLE HOLDER

THE little novel and artistic candlestick here shown is surely deserving of a place on any dressing table or side table. Although candles themselves are now

out of date, the novelty holder shown has a quaint and pleasing effect, and will undoubtedly appeal as a little gift or even as a saleable article.

The candles used are those (apparently) twisted ones in various colours, and they should be bought to blend with the actual shape of the woodwork.

Patterns for making this candlestick are given in the centre pages of this issue, and only a few pieces are required. Odd pieces of waste wood can be used, and the patterns provided can be traced out on to the wood direct.

Finished in Colour

All the work, of course, is cut out with the fretsaw, and having completed the actual woodwork, the parts are painted in different colours to bring up an artistic finished effect. The Crusoe enamels in 2½d. tins, supplied by Hobbies, are quite suitable, or, of course, you can treat the subjects with ordinary wood stain or ebony black.

In any case, the ship wants to stand out in a contrasting colour from its background, and if you are at all artistic with an ordinary paint brush, you can make this ship under full sail a really beautiful piece of work.

Painting Suggestions

Even if you are not able to get a lot of light and shade, you can get a striking effect by following out the lines of the design shown.

If you are painting the ship black, then get the lines in white as indicated. If, on the other hand, you are having the ship in whitewood, then paint the lines in black. The rest of the work should be carried out in fancy fretwood, satin walnut, oak, or something similar.

The back view is given herewith to show the construction, and from this and a study of the patterns the work should be straightforward.

Cut out the base in ¾in. wood, then fit into the rectangular holder the ½in. square upright piece.

To the top of this upright is added the circular drip plate with its edge curved underneath. You can then purchase an ordinary metal candle socket and plate from Hobbies, and screw down to the wooden portion.

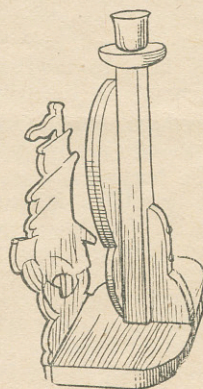
A Strengthening Support

This upright is further stiffened by a little strut piece which is glued into the angle of the base, and vertical piece. The glue should be sufficient, but the position of two screws is given if you care to add them. Immediately in front of the upright is the fancy back which has two apparently overlapping circles cut from 3/16in. wood. The actual angle of the upright is shown dotted, and this should be clearly marked so the wood can be put on correctly.

This piece is glued to the upright so that the bottom edge of the smaller circle just rests on the base. A circular overlay of 3/16in. wood is glued over the larger circle so as to produce a thicker and more striking effect. Be sure that these two circles are flush round the whole edge.

The Ship

The ship design is cut from 3/16in. wood, or if you prefer, from ivory, xylonite or some fancy composition. It is glued to the front flat edge of the base, and if necessary two tiny roundhead screws are driven through at the points shown.



A back view

The whole thing is finished with painting as previously suggested. The best plan is to decide on the scheme of colours before you start, and to do the parts separately, or at least before you add the ship to the front.

Remember, too, the edges of the wood will have to be painted, and in the case of stains a double coat must be applied because of the absorbency.

When made up and nicely coloured, these little ornaments should make an appeal, and sell readily amongst "arty" friends.

**Look out for a model of the Galleon
"Santa Maria." Design coming shortly !**

MUSICAL TUMBLERS

THERE are several ways of obtaining music from glass, but the musical tumblers give a performance almost as good as a piano when some little practice has been acquired in handling them.

The instrument is quite easy to make and if built in the manner about to be shown, may be carried from place to place without the least danger of damage or breakage. The instrument shown in the drawing comprises three and a half octaves in the scale of G, but it may be made much smaller or larger if desired and in any key that one may fancy.

No dimensions are given for this reason, but there are one or two points to be noted in the making of the case if the instrument is to play well and stand a fair amount of knocking about.

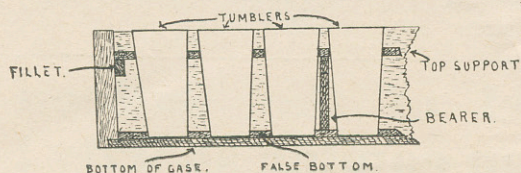
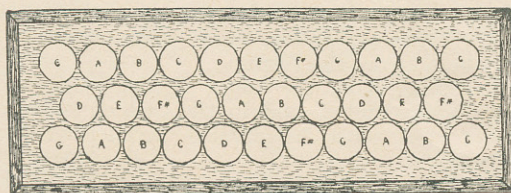
The Case

Use well seasoned hard-wood for the case, mahogany, if you want to make a really nice job. Mitre or dovetail the corner joints together, for the fewer nails used in its construction the better will the tone of the finished instrument be.

The bottom may be of $\frac{1}{2}$ in. wood, rebated into the sides, as shown, and glued into place. A short brad or two, here or there along the edge will help to hold it in place and make little difference to the tone.

How the Glasses Fit

It will be seen from the sectional view that a false bottom is fitted and that the bottoms of the tumblers fit into recesses cut in this. A length of plywood cut to fit accurately into the case supplies this part. A similar length of material is used for the top support, this being supported in the case by means of fillets glued around the inside at a suitable height and also by upright pieces of wood arranged at several points between the tumblers. It does not matter a great deal where these upright pieces are placed, so long as they support the upper shelf and prevent it from sagging or vibrating when the instrument is played.



Having prepared the case and its interior fittings, the tumblers should be obtained before boring the holes in the pieces of plywood forming the shelf and false bottom.

Tumblers to Use

Ordinary tumblers are used, but care should be taken to choose those made from thin glass and quite free from cracks and blemishes. Tiny air bubbles in the glass do not matter, but turn down any which have little marks which look like tiny cracks, for these will develop under the vibration of playing.

Now arrange the tumblers on the false bottom, spacing them so they are about $\frac{1}{2}$ in. apart in the rows and about 1 in. between each row. If separated much further apart than this there is some difficulty in playing very rapid pieces of music as the fingers have too far to travel.

Position and Fitting

Mark out the position of each tumbler by running a pencil line around it and then saw out the circular piece very carefully with a fretsaw, keeping just inside the pencil line. Lay this board over the top support and accurately mark out the position of the tumblers on this piece of plywood. Be sure to make the circle sawn out large enough to fit the increased diameter of the tumblers at this point.

Glue the false bottom into the case, taking care that it lies quite flat and fits comfortably all around. Glue a disc of felt or thick cloth into the bottom of each recess and at the same time glue a strip of the same material around the edge of each opening in the top support shelf.

Accurately measure off the length of the bearers needed for the top shelf and space and glue these in place. Put a touch of glue on the upper end of each and press the top shelf down on to them, gluing down on to the fillets at the same time. The upper shelf should now be stained to match the outer case and lightly polished.

Go over the tumblers and, striking each one lightly with a pencil, pick out those with the deepest note and arrange them at the lower end of the instrument, working upward by tones until all the glasses are in their rests. The tumblers should fit comfortably into the upper holes, with the felt ring just gripping them, and rest down into the felt-lined receptacle in the false bottom. There must be no sign of shake or movement when the glasses are shaken, yet it should be possible to lift each one out with a twisting, lifting movement.

To tune the instrument, say to the key of G, as shown, strike lower G on the piano, or get the tone from any source, and strike the tumbler lowest in the rack.

Supposing the note it emits is too low, pour a little water in and try again, doing this until the desired note is obtained.

Now follow up the scale, tuning each glass in turn—an easy matter once the first is correct.

Your tumblers will now have a varying quantity

of water in each and are ready to be played. Moisten the tips of the fingers and slide these gently around the edges of the glass. A beautifully clear, mellow note will be emitted and you will find that a tune may be picked out quite easily.

Practice

Practice alone making perfect, as with any other form of musical instrument. It will be found that if a little gum arabic is dissolved in the water a better 'grip' is obtained with the finger tips and the note comes with the least touch—a useful tip when rapid passages are being played.

It is advisable to fit a covering lid to the case to exclude dust and allow of the instrument being carried about. This should take the form of a lid constructed in a similar manner to the case and secured to it by means of hooks and screw-eyes or some similar means which allows the cover to be entirely removed when the instrument is being played.

The Proper Way to MAKE A GUY

GOOD old Fifth of November—and its noisy celebrations! Little did the Guy Fawkes guy think that his Gunpowder Plot would create big fires and bangs around and about the Houses of the Corporation and everywhere else—even his own corporation, if you come to that!

No doubt he felt "burnt up" about its failure, but not so much as his effigies are today. But, in "stringing him up on high," the poor lad sometimes "loses his head" or his legs "leave him"—amid roars of laughter and groans for the chaps responsible. Nobody likes being guyed about their guy, so here a few usual hints on making a sturdy effigy.

Use Straw and Fibre

Assuming that you have collected the ancient coat, cap or topper, gloves, trousers, boots, socks, black hair, face mask, collar and tie, add a shirt or sweater to the collection.

To make the body, obtain a generous supply of stiff straw and soft wood fibre. The straw is obtainable from a loft or store, while the wood fibre can be usually procured for gratis from the packer or porter of most furniture warehouses.

When obtained, pack the fingers of the gloves with twisted strands of straw and fill the palms with fibre. Now spread the shirt or sweater on the floor and sew the gloves to the arms of it. Each arm is packed with a thick roll of straw, same being bound in the middle with twine (to give some elbow movement) before inserting.

A thick roll of straw (which must suit the neck of the sweater and stretch down to and beyond

the waist a good deal) is pushed through the sweater to form the neck for the head. This is the backbone. The rest of the body is made up of fibre. Pack this in well and tight.

Filling the Trousers

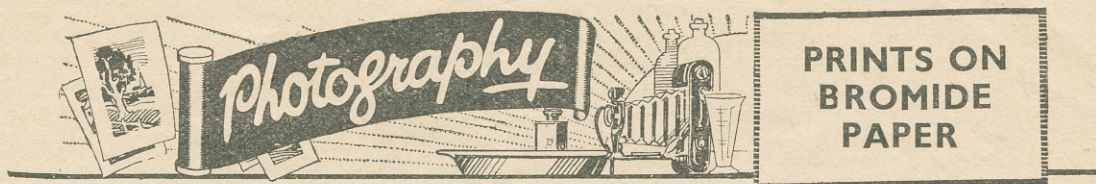
In packing the trousers, fill the socks first with fibre and sew them inside the trouser legs. The legs are packed with several long rolls of straw which are bound together at the knee distance prior to inserting. Space should be left at the top for the backbone projection of the body.

Button the trousers around the inside of the sweater, then pull down the sweater and sew it in place. Old braces brought over the sweater (which should be tucked in the trousers) will help to strengthen the waist joining.

Fixing the Head

Having attached boots or slippers to the socks, set the work on a chair in a sitting position in order to work more comfortably in fixing the head. First of all, stick long loops of wire into the straw neck and fill with turfs of black packing hair or flax. Such forms the skull and thatch of the napper, so be sure you give a correct sized one to suit the mask obtained.

The masks, weird and comic, can be obtained for 1d. at all fancy dress and carnival houses. Fix it on with extra bands of twine, then sew the hat or cap on top, the coat being the last thing to put on. You now have a swell guy that should last through the parading up to the time he is placed on the "hot seat" without turning a hair or a strand of flax!



PRINTS ON BROMIDE PAPER

WHEN you have mastered the printing of gaslight papers you will without doubt be tempted to try your hand with bromide. Although the manipulation is very similar yet the results are different and to the experienced worker they present something which is far better pictorially.

When starting to use this series of printing papers the first effect you will have to realise is that bromide is considerably faster than any other printing paper you may have used. It therefore requires very much less exposure. By taking the various makes and grades of both into consideration, bromide can be considered as round about sixty times faster than the average gaslight paper.

Quick Printing

It is this quality which makes it the paper for pictorialists who use it for enlargements. Gaslight is far too slow for that work and also with the bromide emulsion one can get a better gradation in the image which makes the results more artistic. Once anyone has made prints from their own negatives on both and have been able to make a fair comparison, they will appreciate the good value of the bromide.

No other piece of apparatus is required beyond that which you have used for printing in gaslight or for your self-toning papers. You will, however, be wise to try a different developer. The writer's personal opinion is for Amidol in preference to Metol-Quinol. The latter is the better for gaslight and not so good for bromide, whereas Amidol is not so good for gaslight although it can be used.

Developing and Printing

Amidol developer, however, has one bad feature—it will not keep in solution for more than three or four days. Therefore you have to use up what you make as soon as you can. But it is quite cheap, for you can buy a 4d. packet which contains all the necessary ingredients and this will make from 4 to 10 ounces of solution, sufficient for about three dozen prints.

Printing is done in the same way as for gaslight except that the exposure time is considerably less. It is therefore very advisable to make a trial strip in the way given in the article on gaslight printing. The acid-fixing is exactly the same as for the other.

There is one very important reason why amateurs like to use bromide paper. Bromide lends itself to the Sepia Toning process so popular with everyone, and if the prints have been developed fully with Amidol some very rich and beautiful tones are obtained on any of the many surfaces or grades of paper.

Solutions Wanted

The process usually adopted and which is undoubtedly the most convenient is known as the Sulphide method and is quite simple for anyone to do.

Bleacher. Potassium bromide $\frac{1}{4}$ ounce.
Potassium ferricyanide $\frac{1}{2}$ ounce.
Water to make 10 ounces.

This is a concentrated stock solution and when not in use must be kept in a dark cupboard away from the light.

Toning. Soda Sulphide pure 2 ounces.
Water 15 ounces.

Washing and Fixing

All prints must be fixed and washed free from hypo. Take one ounce of the stock bleacher and add four ounces of water to it, pour this into a dish and pass the prints into it. In a few seconds you will see the black image disappearing, leaving a faint yellowish image in its place. They are now ready to be washed free from the yellow stain and while this is proceeding take one ounce of the Toning solution and add 5 ounces of water to it.

Pour this into another dish, transfer the washed prints to this and in a quicker time than it takes to tell you, you will see the image re-appear, but in a beautiful sepia colour.

Unwanted Solution

The tones are quite permanent so the prints will not fade. Do not attempt to save the used solutions, throw them away. It is best to do so down an outdoor sink as the toning solution sets up a fairly dreadful smell. If the water is allowed to run for a few minutes, however, it will not be too disagreeable.

When you get far enough advanced to do your own enlarging you will have to use bromide paper and you will find your experience of making contact prints with it extremely useful, the toning process is exactly the same for the enlargements as described above.

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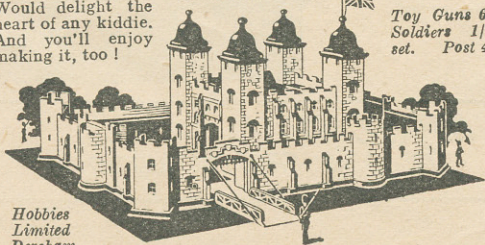
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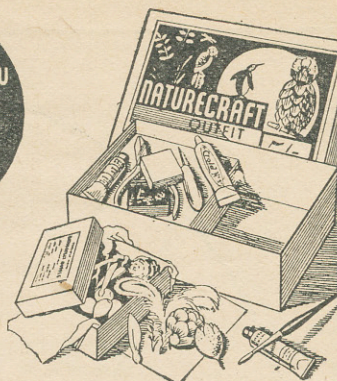
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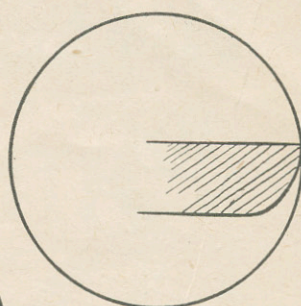
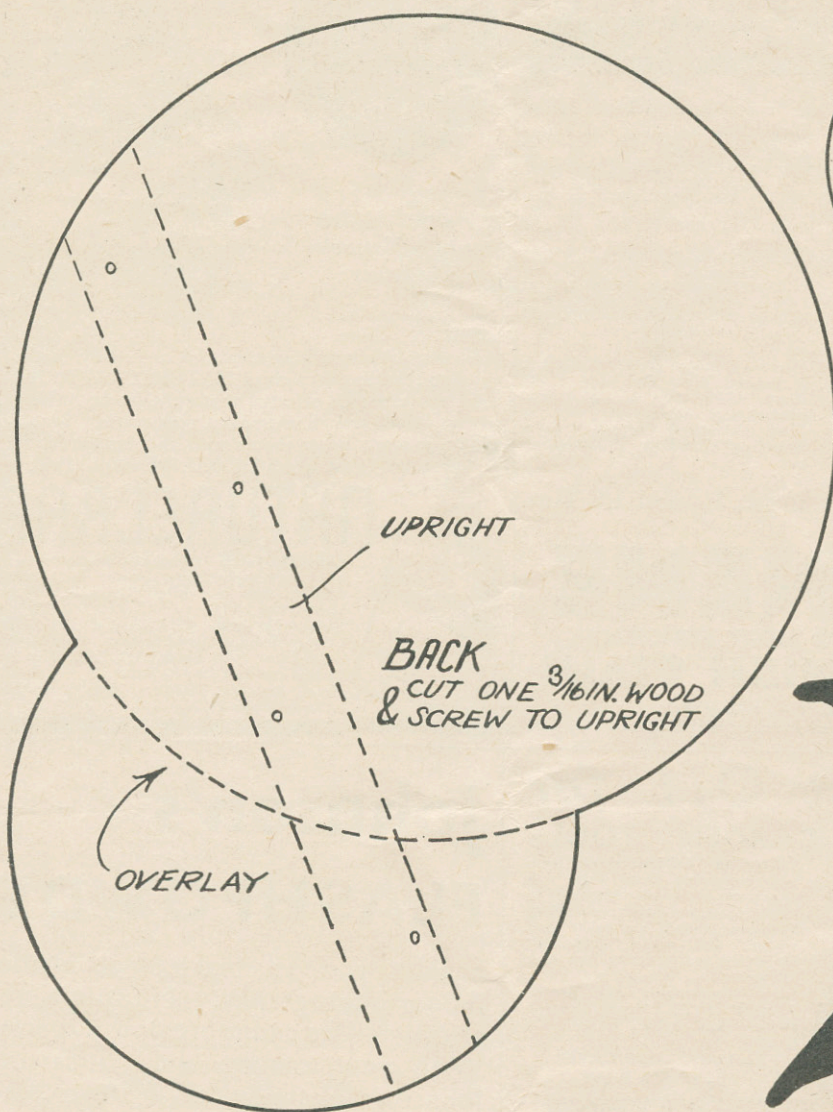
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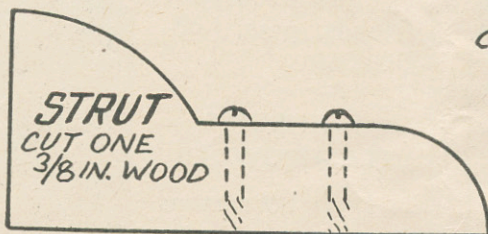
SCR

DRIP PLATE
CUT ONE $\frac{3}{8}$ IN. WOOD.
SHAPE AS
SECTION

UPRIGHT

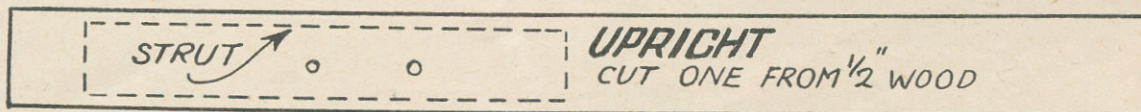
BACK
CUT ONE $\frac{3}{16}$ IN. WOOD
& SCREW TO UPRIGHT

OVERLAY



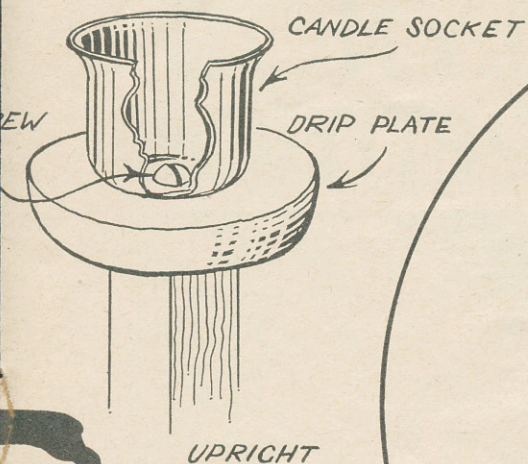
STRUT
CUT ONE
 $\frac{3}{8}$ IN. WOOD

SHIP
CUT ONE $\frac{3}{16}$ IN. WOOD



STRUT

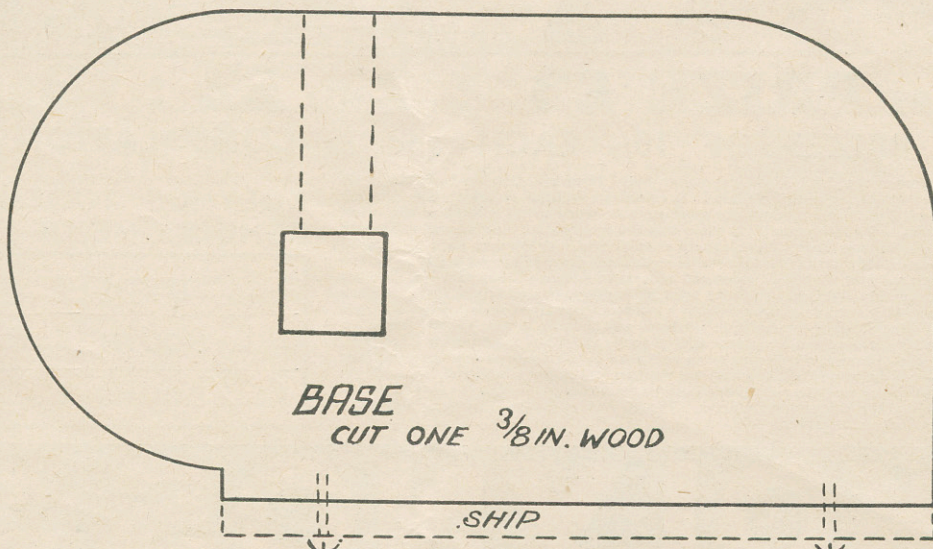
UPRIGHT
CUT ONE FROM $\frac{1}{2}$ " WOOD



NOVEL ORNAMENTAL GALLEON CANDLE HOLDER IN WOOD

Full instructions on page 135

OVERLAY
CUT ONE $\frac{3}{16}$ IN. WOOD AND
GLUE TO BACK



Remember! Remember! KOLYNOS COMPETITION



1ST PRIZE £3 : 2ND £2 : 3RD £1
10 PRIZES OF 10/- EACH and 25 CONSOLATION PRIZES

November the 5th? The Gunpowder Plot! Firework Displays?—but what is the secret meaning of this picture? It contains a number of hidden words which you must find. Then choose the most suitable word to fill in each of the blank spaces in the adjoining panel. In every case the combination must denote something of which Kolynos Tooth Paste should remind you. When you have discovered what you consider to be the right words write them down in correct order on a piece of paper and post with your name and address to Kolynos (Dept. C15) 12, Chenies Street, London, W.C.1. You may send in as many entries as you like, but each separate entry must be accompanied by a yellow carton taken from tubes of Kolynos Dental Cream, which you can obtain from any chemist in 1/9, 1/- and 6d. sizes. December 15th is the closing date and all prizes will be sent off before Christmas, names and addresses of winners being published in this paper as soon afterwards as possible. The prizes will be given for the best and most suitable list of words; in case of a tie, or ties, the rights is reserved to divide the prize, or prizes, or to decide in favour of the best written entries. The decision of Messrs. Kolynos (Sales) Ltd., will be final and legally binding.

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1TEETH	4 SMILE
2 MOUTH	5 HABIT
3 GUMS	6BRUSH

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A HOME-MADE ROWING EXERCISER

GENERAL health and fitness can be immensely improved by suitable exercises on rising. Rowing is recognised as one of the best all-round exercises possible as it brings into play almost every muscle in the body. With the aid of the exerciser illustrated, one can enjoy all the actions of rowing in a bedroom.

The exerciser shown, while differing in no particular degree from the professional article, is so designed that it needs no metal fittings other than those easily obtainable. The elastic strands used are those supplied by sports outfitters for chest expanders, and can be got singly.

Fig. 1 shows a front view and Fig. 2 a half plan, giving the principal dimensions, while the cutting list shows the sizes of timbers to be used. Well seasoned red deal is quite a good wood to use. The sides A are joined together by cross rails, B a simple tenon joint being used. Glue up and screw through the sides into the rails. These rails can be set in. in from the ends. The footboard,

E, slides in grooves, cut $\frac{1}{2}$ in. deep and at an angle as shown. Three sets of grooves are advisable to enable the board to be shifted according to the length of legs of the person using the exerciser.

The middle cross member, C, has two grooves cut across, the grooves being in. deep and just in. apart. The sides, A, are similarly grooved underneath at the centre so as to fit in the grooves in C. This will fix C across the centre firmly.

Oar Movement

The ends of C are reduced to form tenons and the oar supporters, D, are notched beneath to fit, as in Fig. 3. Cut the sides of these supporters to slope upwards, and in the centre of the top drive in a stout screw hook. Fix to C with glue and nails and strengthen with iron brackets behind. There is some strain here.

The seat is a piece of board cut to overlap the sides in. Along the front glue a piece of half-round moulding and underneath screw two battens. These battens are fixed $\frac{1}{2}$ in. in from the sides. To enable the seat to slide easily to follow the motions of the body, a pair of ball bearing runners are fixed in each batten. These are quite cheap, costing but 2 $\frac{1}{2}$ d. each, and working along a steel track ensure easy motion if properly fitted.

Fixing the Framework

Lay the framing of the exerciser on to the battens of the seats, the seat of course being underneath. See the sides are central on the battens and mark the position of them by drawing pencil lines down the side pieces. These lines will be the guide for cutting the necessary mortise slots for the runners to fit in.

Cut the slots accurately in line, press the runners in and there screw. Fig. 4 shows an underside

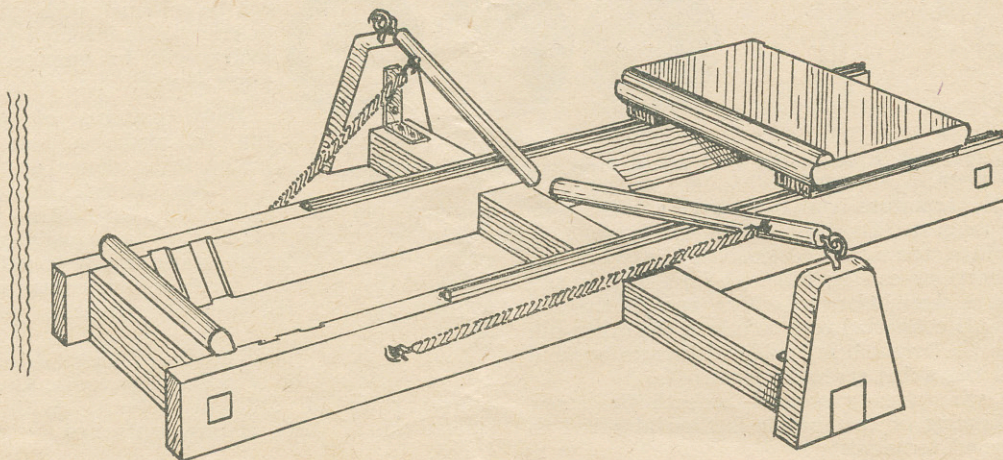
CUTTING LIST

	No.	Length	Width	Thickness
Sides A	2	4ft.	3ins.	1in.
Rails B	2	1ft.	3ins.	1in.
Footboard E	1	10 $\frac{1}{2}$ ins.	5ins.	1in.
Crosspiece C	1	3ft. 0ins.	3ins.	2in.
Oar supporters D ..	2	6ins.	6ins.	1in.
Seat	1	1ft. 2ins.	10ins.	1in.
Seat battens	2	9ins.	2ins.	1in.

2 15in. lengths of broomstick and one 14in. piece of 1in. half-round moulding.

INCIDENTALS

2 pairs of runners; 2 3ft. lengths of steel track for same.
2 elastic strands 1 pair 3in. iron brackets.
2 pairs large screw hooks and eyes.
4 smaller screw eyes.
Runners and track from—F. Romany, 52 High Street, Camden Town, London, N.W.1. Price 2 $\frac{1}{2}$ d. each runner, 2d. foot for track plus about 8d. postage.



view of the seat and battens, showing the slots cut for the runners. This done, lay the lengths of track on the side pieces, A, and fix with small screws, running the seat up and down as a guide during fixing. A section of the track, fixed to the sides, is shown in Fig. 5.

The oars are represented by two lengths of broomstick. Round the ends neatly and in one

be much improved in appearance by a coat or two of varnish.

Where space is restricted, as in a small bedroom and the extended portions of cross member C are somewhat in the way when the exerciser is not in use, then C can be pushed out of its grooves and laid in line with the exerciser when the machine is not in action.

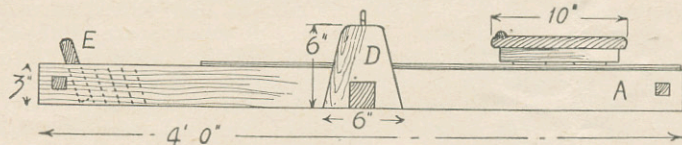


Fig. 1—A front view with dimensions

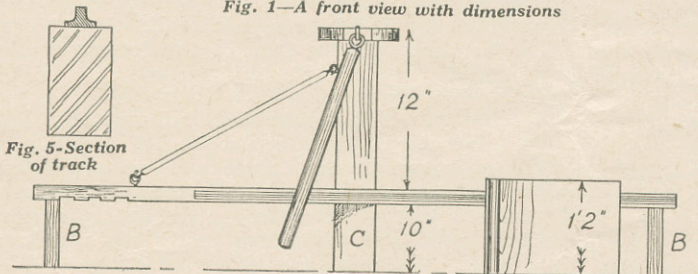


Fig. 2—A half plan of the machine

end of each drive in a stout screw eye, and just below that a smaller eye to which an elastic strand can be hooked. Similar eyes are driven in the sides of the exerciser for the other ends of the strands, the position of these will be found by trial. This completes the exerciser which will

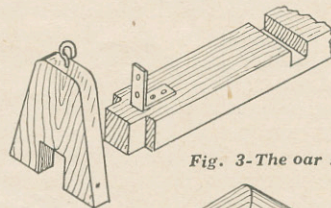


Fig. 3—The oar supports

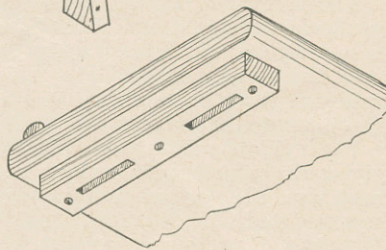


Fig. 4—Underview of seat and battens

Additional elastic strands can easily be added to strengthen the action by fitting two eyes to each oar instead of one. Let one be on top and one underneath. Two strands can then be attached or even more if required.

Scientific Tops—(Continued from opposite page)

The brush is a strip of springy brass such as the long terminal from a spent flash lamp battery.

The wooden mount, D, is cut from $\frac{1}{4}$ in. fretwood as in Fig. 4 and glued to the baseboard in a slot cut for its reception. Trim the brush to about $\frac{1}{16}$ in. in width and screw to the mount so that it is level with the filed flats on the spindle.

Bend it so it presses lightly against the spindle

Connect a battery to the terminals, give the armature a twist and it should rotate at a high speed. If it does not, then the brush will need a little adjustment with the fingers, bending it cautiously until the spindle rotates satisfactorily.

The circular platform for the coloured discs is a $2\frac{1}{2}$ in. diam. circle of thin cardboard, pushed as a tight fit on the spindle. The coloured discs can be cut from stiff white paper or Bristol board. These can be coloured with paints or crayons, or coloured paper sectors can be gummed on paper foundations.

Many patterns of discs can be made, a few suggested being shown at Fig. 6. Disc A has one side

coloured red and the other blue. Red and yellow or yellow and blue make equally good combinations. Different shades of colour will be obtained by allowing more of one colour than another, quarter red and three-quarter yellow for example.

Disc B is a combination of three different colours, primary or secondary, and disc C concentric rings of different colours. With an assortment of discs endless tints can be produced.

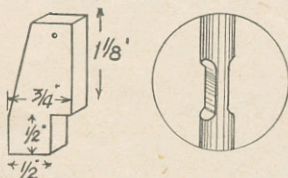


Fig. 4—The wooden mount

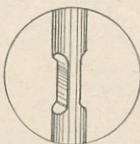


Fig. 5—How to file the spindle

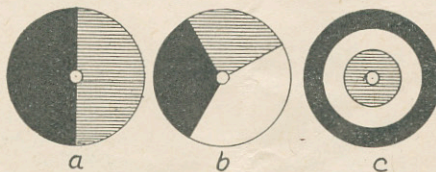


Fig. 6—Some suggested disc patterns

when the armature is at right angles to the coils of the magnet. On each side of the bracket, C, screw in a terminal and connect the wires up.

Connections can be followed from Fig. 2 and are quite straightforward. One end of the coil winding is connected to a terminal, the other end goes to the brush, being soldered thereto or fixed behind the fixing screw as preferred.

The wire already secured beneath the screw head bearing of the spindle is then attached to the second terminal.

The AMATEUR

ELECTRICIAN

SCIENTIFIC COLOUR TOP

MOST readers have doubtless seen those interesting tops which display coloured paper discs. The varying shades of colour produced by different discs is fascinating to watch, but it is aggravating to see the top stop spinning just as one is interested.

The one illustrated works by electric current, needs no winding, and ceases to rotate only when the current is cut off, a great advantage for such a scientific toy.

The base is a piece of hardwood, $2\frac{1}{2}$ ins. by $3\frac{1}{2}$ ins. and $\frac{1}{2}$ in. thick. The field magnet, A, is a piece of iron $\frac{1}{2}$ in. wide and $3\frac{1}{2}$ ins. long. Its thickness is immaterial within reasonable limits, $\frac{1}{16}$ in. or less will serve. A piece cut off an old strap hinge will do nicely. Drill this in the centre to take the shank of a stout $\frac{3}{8}$ in. round-headed brass screw and bend up $\frac{1}{2}$ in. at each end.

The Poles

The bent up ends will form the poles of the magnet, and should be covered with a strip of stiff paper, wound round a few times and glued. On each pole wind 60 turns of 24 gauge or thereabouts D.C.C. copper wire, leaving a few spare inches each end for connections. It is important that the wire should not be wound in the same direction on each pole, so after winding one bring the wire over diagonally to the other pole and wind in the opposite direction.

Tie the ends of each coil with thread to prevent unwinding. See the tops of the poles are level, then screw to the base in the position shown in Fig. 2.

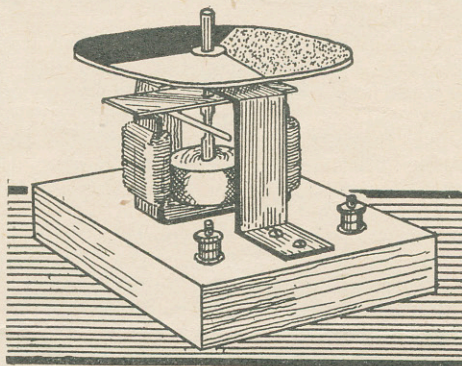
Before screwing tight, slip one end (bared) of a few inches of the D.C.C. wire underneath the screw head. Screw up tightly and file the screw head flat. In the centre of the flat, drill a tiny conical depression for the end of the spindle to rotate in.

The Spindle

The spindle can be a 2 in. length of stout brass wire or a suitable wire nail, the former is easier

for soldering. File the bottom end of this to a neat point.

The armature, B, is a $\frac{1}{2}$ in. by $1\frac{1}{2}$ in. strip of stout tinplate. Punch a hole in the centre of it and press it on the spindle. Bearing bracket, C, is a strip of $\frac{1}{2}$ in. by $3\frac{3}{8}$ in. brass. Bore a hole near one end, which should be an easy fit over the spindle, and two holes in the other end for fixing screws. Bend up at the dotted lines, seen in Fig. 3, then slip the spindle in and shift the



bracket as required until the spindle is vertical. Now fix the bracket to the base with screws.

Arrange the position of the poles of the magnet until it swings just clear of the armature, then lift out and solder the armature in that position. At a spot on the spindle, just below the armature, file two flats as shown in Fig. 5, enlarged for clearness.

The Wood Disc

Below this press on a $\frac{3}{4}$ in. diam. disc of wood. This can be cut out of similar wood to the base and should have a hole for the spindle bored in it, truly central and a tight fit. Press this on and replace the spindle and bracket. Give it a twist and the spindle should rotate freely and rapidly, not catching anywhere.

(Continued on opposite page)

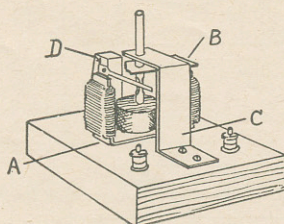


Fig. 1—General details

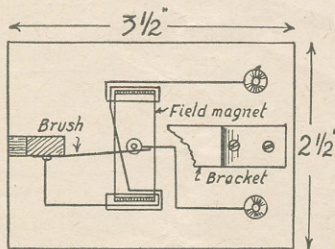


Fig. 2—The layout on the base

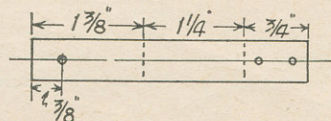
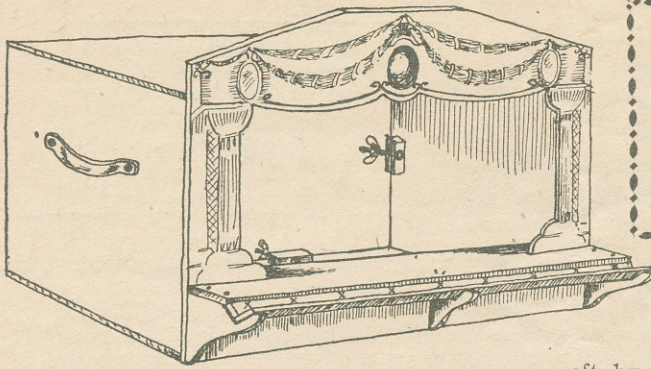


Fig. 3—The bracket strip



THE PUPPET SHOW

The first of a new series telling you how you can make your own entertainment variety show. All details for Glove Puppets and Marionettes will be given.

A MOST fascinating hobby is the making and operation of a Puppet Theatre. While being assured of your own amusement you can entertain your friends with the quaint antics of your Puppets.

Just think of the fun in being your own stage manager and lighting technician. You will be able to stage your own lighting effects and control the movements of the Puppets. For home use the Glove Puppets are far more suitable than the string Marionettes, whilst of course, the making and operation of the Glove Puppets and Theatre is somewhat simpler.

The Theatre itself is transportable but not collapsible. You will find that the box shape of the Theatre will provide an admirable receptacle for storing the Puppets and stage properties. For carrying purposes the Theatre body is fitted with handles and a back cover in a way to be described later.

Made from Odds and Ends

Incidentally, you will be surprised at the great variety of odds and ends which can be used in the making of your Puppet Theatre. So quite early on it is a good idea to put on one side such materials as brightly coloured pieces of silk or sateen, odd pieces of fur cloth, short lengths of rug wool, empty cotton reels, coloured glass beads, buttons, etc.

Now comes the actual making of the Theatre.

To begin with, make a box shape 3ft. 6ins. by

2ft. by 1ft. 2ins., outside measurements, consisting of the top, bottom, and the two short ends. The wood used should be fairly stout, $\frac{1}{2}$ in. planed deal being quite suitable. It is not necessary for this box shape to be elaborate but at the same time, being the body of the Theatre, it must be strong.

You may use your own ideas in the actual construction, and the result should be a box with the two large sides missing, as shown in the sketch at Fig. 1.

Corner Blocks

Screw the corner pieces and blocks A (1in. square by 2ins.) in position as shown. The four smaller blocks B are screwed one on each side $\frac{3}{16}$ in. inside, these acting as 'stops' for the back cover which is cut from plywood to fit inside the back. This back cover is removable, being temporarily secured during transportation, by bolts and wing nuts, to the stops. Two of these bolts are shown in Fig. 1. Holes are bored in the back cover to take the stems of the bolts and small washers should be used to take the rub of the wing-nuts.

Carrying Handles

The three carrying handles may be purchased from Hobbies (Cat. No. 6189) or easily made from strips of leather. Fix these handles, one at the centre top and one on each short end. When 'travelling light' the top handle may be used by one person, but with a lot of kit, two persons will be required, one at each end handle.

If you make your own handles, do not forget to use washers in fastening as the leather will tear round the screw head with use.

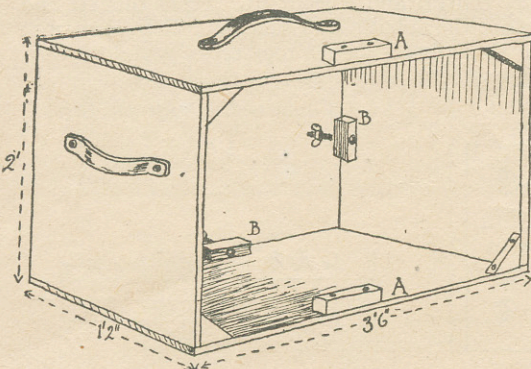


Fig. 1—The general construction

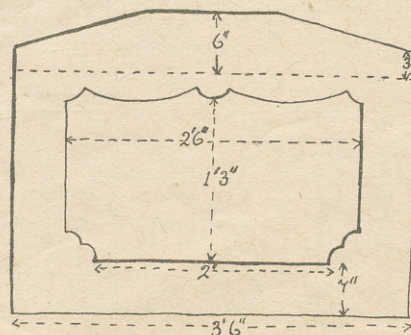


Fig. 2—How to cut the shape for the front

The front is cut from 3/16in. ply as in Fig. 2 and is screwed into position, using the blocks A and corner pieces to take the screws. Then comes the stage, which is cut 1/2in. planed wood according to the pattern in Fig. 3 and is fixed by means of three stout brackets under the front, one at each end and one in the middle.

These brackets are shaped to take the footlight trough, which is made from two strips of wood fastened together to fit the V-shaped cuts in the brackets supporting the stage. Make sure that the screws of the outside brackets are screwed into the thickness of the ends of the box shape.

The side of the footlight trough nearer the stage is used for carrying the bulbs while the other side of the trough carries the reflectors. A splendid reflecting surface is obtained by fixing odd pieces of broken mirror to this side. The position of the lights is indicated in crosses in the finished picture.

When you have reached this stage your Puppet Theatre should have the appearance indicated as shown. Give the whole a good rub down with glasspaper, paying particular attention to the front as this will face your audience, and dust carefully with a soft cloth.

Suggestions for Decoration

Give the top and sides a good undercoat followed by a finishing coat of a dark coloured paint. The front, under the stage and the supporting brackets are treated in a similar manner. The rest of the front may be decorated according to any design, using any type of colouring available.

A preliminary coat of size is necessary before colouring as the plywood is very absorbent. Coloured enamels of course give the best effects,

but water colours and poster colours, given a coat of good clear varnish, provide a most useful way of colouring.

The Hobbies 'Crusoe' Home Painting Outfit at 1/9 is ideal for decorating the front of the Theatre and incidentally for the Puppets and Stage properties. These paints will intermix, thus providing a wide range of shades and colours.

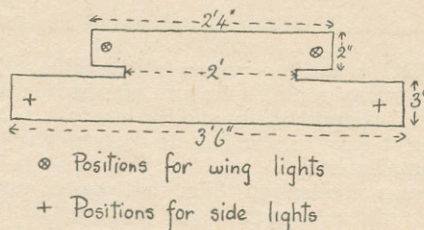


Fig. 3—A detail of the stage

Do not overlook the possibilities of the new 'metal' colours, bronze, aluminium, gold and silver, etc. The design for the front may follow a simplified form as in a real theatre. Fancy and brass headed nails, etc., may be utilised to advantage along with odd scraps of silver gold and coloured foil. The specially shaped mirrors given on page 210 of the Hobbies Handbook are very useful.

For the front design, the centre piece at the top is a convex polished dome, cut from a door finger-plate while the two end pieces are small oval bevelled edge mirrors.

The next step is the fixing of the curtains and scenery, this being dealt with in the next article.

(To be continued).

HOBBIES LEAGUE CORRESPONDENCE CLUB

These Members of Hobbies League would like to get in touch with other readers and so form pen friendships which will undoubtedly prove interesting to all. In this way, one has a wide circle of friends and increased knowledge in people and places, not only in one's own country, but all over the world. Members should write direct to the addresses given, stating their full address and age, adding any hobbies in which they are interested. Hundreds of members have already taken advantage of this Correspondence Club in this way and others who wish to do so should notify the Registrar with the necessary particulars.

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G. Hallam.	17, Clayton St., Queens Drive, Nottingham.	Girl in U.S.A. (20 yrs.) England, interested in Electricity (20 yrs.)	Electricity.
A. H. Oji.	Railway Station, Omoba, Via Aba, Nigeria.	Anywhere.	Anything.
E. F. Chukwuenyem Obi.	Enitonna High School Office, Barracks Rd., P.O. Box 30, Port Harcourt, Nigeria, W.C. Africa.	England. (Male or Female).	Anything.
S. Smith.	88, Douglas Drive, Moreton, Wirral, Chesh.	British Colonies.	Stamps especially Coronation.
T. C. Chacko.	P.W.D. Office, Batu Pahat, Johore, Malaya.	All parts of the World.	Stamp Collecting.
A. Powell.	12, Sherley Rd., Stratford, London, E.15.	Anywhere.	Anything.
C. R. Rodrigues.	"F" Garden City, Malacca, S.S.	Anywhere.	Stamps, Hobbies.
F. K. Snow.	10, Avenal Gardens, Medindie, S. Australia.	Different parts of the World.	Collecting Stamps.
J. N. Ume.	Ajalli Government School, Awka District, Onitsha, Nigeria, W.C.A.	England.	Anything.
S. O. Nwangwu.	Railway Station, Omoba, via Port Harcourt, Nigeria, W.C. Africa.	England & America.	Football, Tennis, Scouting.
H. Cockcroft.	7, Granville Tce., Hill Top Rd., Paddock, Huddersfield, Yorks.	British Isles. (Preferably London).	Making Working Models and Swimming.
R. L. Sadler.	The Crofts, Burland, Nantwich, Cheshire.	County of Cheshire. (Girl aged 14).	Anything.
Klaus Exner.	83, Holtenauer St., Kiel, Germany.	Girls age 16-17 years.	Anything.
Ong Wee Bee.	c/o Ong & Co., 53, Jalan Besar, Singapore, S.S.	British Empire and Overseas.	Match box labels and Stamp Collecting.
H. Phelps.	122, Roseberry Gdns., Green Lanes, Harringay, London, N.4.	Anywhere, preferably London and Suburbs, Essex (15-25 yrs.)	Cycling and anything interesting.

SMALL FOLDING OCCASIONAL TABLE

HERE is a very serviceable little table, suitable for any room, a feature of which is that it takes apart easily and the legs fold together, making it easy to stand aside when not required for immediate use.

It has a circular top 18ins. in diameter, and the legs are of the favourite twist pattern. Both the circular top and the set of four legs can be bought from Hobbies for 6/3, and when ordering, No. 538 should be quoted for the circular top and No. 516B, for the legs.

The top, not being actually fixed to the rails or legs, is provided with four shaped blocks underneath which engage with the tops of the legs and thus hold the latter rigid. The leg rails again, are pivoted with long screws so the four legs fold closely.

The Top

First prepare the top of $\frac{1}{2}$ in. whitewood with nicely rounded edge. The plan underneath (Fig. 1) shows the two centre lines (dotted) upon which is plotted the positions of the legs. Get these centre lines drawn in correctly, and we give the geometrical method of finding the centre of the circle and also the two centre lines.

Referring to Fig. 2, we see a circle with a chord A, B drawn in. This chord can be drawn in anywhere within the circle and roughly about quarter distance in.

Bisect this chord by a line which will extend so that it cuts the circle at C, D. Now bisect C, D, by the line E, F and the intersection with the line C, D at O marks the centre of the circle. The lines

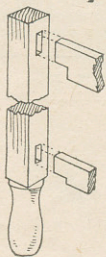


Fig. 5—Rail joint



Fig. 6—Section of the folded frames

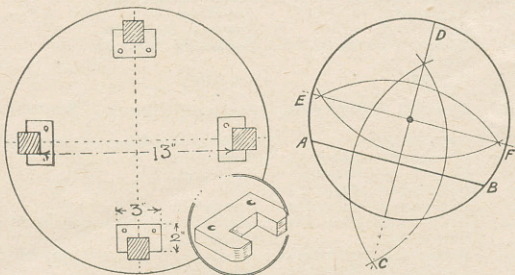


Fig. 1—An under view of the top Fig. 2—How to mark positions

C, D and E, F are those upon which the positions of the legs may be set out.

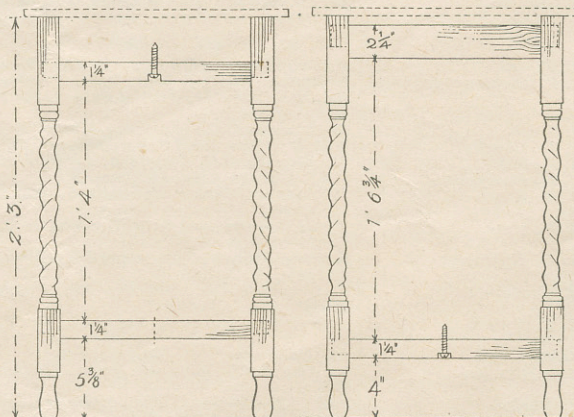
Set out $6\frac{1}{2}$ ins. along the centre lines and then from these points mark out squares $1\frac{1}{2}$ ins. sided which will give the exact positions of the top of the legs.

Four blocks are made from pieces 3ins. by 2ins. by $\frac{1}{2}$ in. thick, cut as shown in the plan (Fig. 1) and in the enlarged detail. The recesses in these blocks should be made full $1\frac{1}{2}$ ins. wide and 1in. deep so the tops of the legs will fit easily into them as shown. Glue, and two screws to each will hold the blocks securely, and the whole may then be cleaned up ready for staining and polishing.

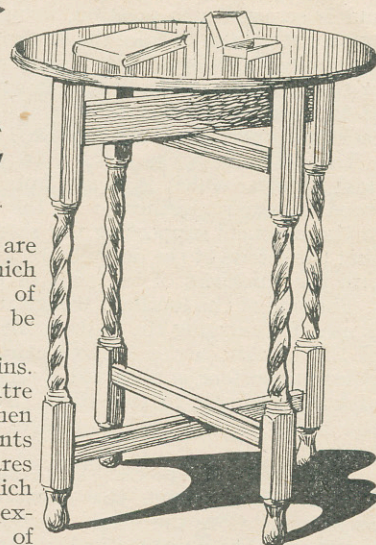
The legs will be trimmed down to 27ins. by laying all four legs together. Cut the waste wood away with a fine tooth tenon saw keeping a perfectly square cut. Each pair of legs will be framed together as shown in the details Figs. 3 and 4. The cross rails of the frame (Fig. 3) will go in between those of Fig. 4.

The Frames

Take the Fig. 3 frame and set out the measurements shown on one of the flat surfaces of each leg. Then mark off $\frac{1}{2}$ in. for the thickness of the rail set down 1in. wide, from the top line of the



Figs. 3 and 4—Details of the two frames



rails. The depth the tenons run into the legs is $1\frac{1}{8}$ in. The dotted lines in Fig. 3 show exactly the positions of the tenons when knocked into place and glued.

A sinking must be cut in the upper rail about $\frac{3}{4}$ in. long and $\frac{1}{2}$ in. deep, to allow the screws to pass well through and so get a good fixing.

The four rails are $15\frac{1}{4}$ ins. long, and so $1\frac{1}{8}$ ins. will be set in from each end for tenons (as Fig. 5). This shows the rails ready to be knocked into place.

The frame (Fig. 3) can be knocked together and glued up and completed but the other frame that given in Fig. 4, will have to be glued up with the first frame inside it. In making up the second frame Fig. 4 must be followed. The top rail of this is 1 in. wider to give extra stability,

so the two tenons on this rail will be $1\frac{1}{8}$ ins. long with depth of $1\frac{1}{8}$ ins. The recess for the pivot screw will be made on the lower rail of the second frame.

When the frames are complete, put in the 2 in. No. 12 screws. When folded the frames will appear, in section, as shown at Fig. 6.

All the woodwork should be cleaned up before stain is applied, and when this is dry the whole should be coated with clear varnish, the top of the table being french polished.

MATERIAL REQUIRED

3 rails $15\frac{1}{4}$ ins. by $1\frac{1}{8}$ ins. by $\frac{1}{2}$ in.
1 rail $15\frac{1}{4}$ ins. by $2\frac{1}{8}$ ins. by $\frac{1}{2}$ in.
1 rail 12 ins. by 2 ins. by $\frac{1}{2}$ in.
Table top (No. 538) $3/6$. Set of legs, (No. 516B) $2/9$. Two iron 2 in. roundhead screws, size 12.

NO MORE BANGING DOORS!

THERE will be no more banging doors if you use a door stop, and besides holding doors open, the stops can be both quaint and amusing, and quite a decoration to any room.

Any number of designs can be made, and each one different. All you need is three ply, enamel; and some solid little wood blocks.

The size of door stops varies, but a good average to aim at is from about 6 ins. high and upwards, to 10 ins. Choose some nice design, and if it is not the size you want, enlarge it.

Cutting the Outline

Fig. 1, with the basket of flowers, shows how to do it by the easy square method. Rule out larger squares on a piece of paper, and draw the picture in from the equivalent small ones.

Now make a tracing of the outline, rub it over with black pencil at the back, and trace it on to the wood. Cut out the design with a fretsaw.

Glasspaper the wood over smoothly, and give the job a coat of white enamel. When this is quite dry again glasspaper it over lightly, then trace down the inside lines of the design.

The next step is to enamel it in its appropriate colours, taking care they do not run into one another.

When the painting is quite dry in most cases it is improved with an outline. Use black, gold, or silver, or a darker shade of the predominating colour.

Now glue the wooden cut out onto a small wood block, paint or stain this, and do the back of the cut-out to match. It is quite a good plan too to stick a piece of felt below the block to avoid any scratches on a polished floor, but not essential. The block can also be more weighted if necessary by bits of lead let in.

Now the stop is finished, and can be stood up

against the door so that it stays put where you want it.

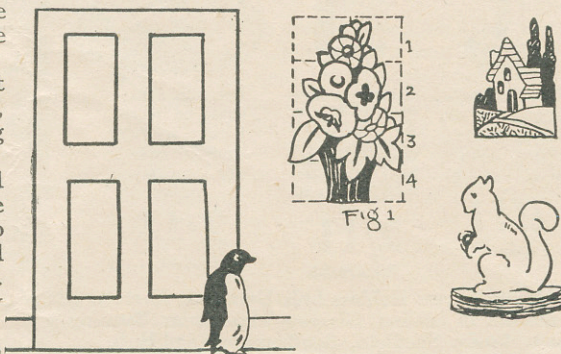
The illustration gives a few suggestions for designs, but all sorts of other ideas can be carried out equally well. The solemn little penguin guarding the door looks very striking in his smart outfit of black and white; this is decidedly a case for a black outline.

A "Delightful Residence" painted in cream with a scarlet roof, black trees and green grass has a black outline. Master squirrel, too, is a cunning little creature, holding a nut in his paws, painted in light brown with a darker brown outline.

Instead of a wood block he is fixed into a piece of fire log, cut in half with a groove made in it.

In this case a tenon should be left below the figure to fit into the groove, and some glue added to secure it firmly. The log gives the appearance of the squirrel sitting on a tree stump.

The gay basket of flowers painted with blue, pink and mauve flowers, outlined with gold, also makes a most colourful and attractive door stop.



MISCELLANEOUS ADVERTISEMENTS

The advertisements are inserted at the rate of 2d. per word prepaid. Name and address are counted, but initials or groups, such as E.P.S. or £1/11/6 are accepted as one word. Postal Order and Stamps must accompany the order. They will be inserted in the earliest issue. To sell anything except fretwork goods or those shown in Hobbies Handbook. Orders can be sent either to Hobbies Weekly, Advertisement Dept. 30/32 Ludgate Hill, London, E.C.4, or Dereham Norfolk.

LONELY? Then write Secy., U.C.C., 16BB. Cambridge St., London, S.W.1. Genuine. Estab'd. 1905.

THE WORLD'S MOST POPULAR FRETWORK SET—Hobbies A1, price 10/6; post 9d. Other sets from 1/6 to 21/-. Send for list.—Hobbies Ltd., Dereham.

INVENTIONS PROTECTED. Booklets gratis.—Reginald W. Barker & Co., Patent Agents, 56 Ludgate Hill, E.C.4.

BUILDING A MODEL POWER BOAT? We supply a steam engine unit, complete with propeller and shaft for only 10/6, post 6d. Suitable for boats up to 30ins. long.—Hobbies Ltd., Dereham.

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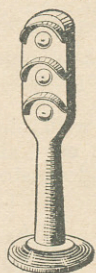
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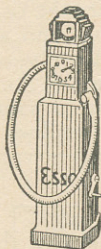
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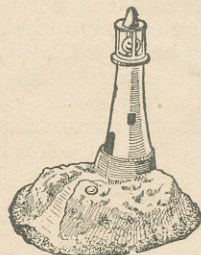
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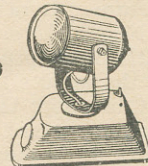
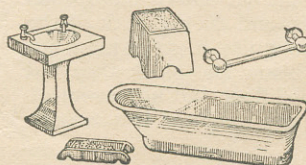
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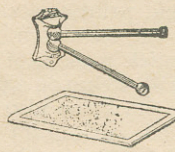
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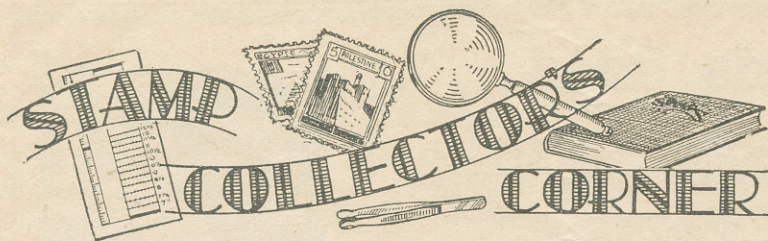
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STAMPS OF JAPAN

(Continued)

CONTINUING our study of the range of stamps issued by Japan (see *Hobbies Weekly*, Oct. 30th), we come to more recent years.

In the year 1920 there was the erecting of a Temple to the memory of the Emperor Mutsurito and in the next the commemoration of the 50th anniversary of the inauguration of the Japanese Post Office.

The illustration of the stamp showing the two warships Katori and Kashima is that which was issued when the Crown Prince returned to Japan after his World Tour in 1921. Two years later the visit of the Crown Prince to Formosa was commemorated in a somewhat similar fashion by the issue of even two more stamps.

The Imperial Silver Wedding was heralded by two stamps with birds as the central themes of the designs. The first had two cranes and the second had a phoenix.

The latter is a mythological bird of ancient legend, said to be the only one of its kind. It lived for 500 to 600 years, at the end of which time it built for itself a funeral pile, lighted it with the fanning of its wings, and rose again from the ashes.

The next issue of importance was that in commemoration of the 50th entry of Japan into the

was a sign that Japan had designs on that part of the Australian coast for a colony.

The coronation of the Emperor Hiro Hito again gives us a phoenix, though this is not such a successful interpretation of the legend, as the design of the stamp previously described.

The second census of 1930 was the subject of the issue of the stamp shown, a map of Japan. The stamp which was issued for the first census which was mentioned a little while ago had as the design, the picture of a VII century Censor, both of which are quite suitable designs for the subject.

In 1934 the 15th International Red Cross Conference was held at Tokio, and naturally a set of stamps was issued for this. One of the designs was the Insignia of the Society and the second gave a picture of the Society's buildings. The next year was the occasion of the visit of the Emperor of Manchukuo to Japan, and, of course, this necessitated more stamps. One had on it the cruiser Hiyei, and pagoda Liao-yang, the other the Palace Akasaka at Tokio.

Mount Fuji appeared on the New Year Stamp of 1935, and the same celebrated volcano was viewed from four different angles

East at the present time.

Notice just before this that we said the last illustration of the stamps from Japan, and now it seems that we are giving a further picture. Yes we are—but this specimen is overprinted with two small characters at the bottom of the stamp (they should be plain enough for all to see), and these two little marks denote that the stamp does not come from Japan but from Japanese Post Offices in China.

They should therefore be put there and not in the album as though it was an ordinary Japanese stamp.

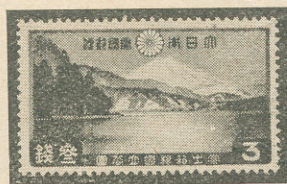
These overprints should be looked for, especially if you have not noticed them before, as that should give you a chance of looking over some of your spare stamps and finding some that you now know something about.

Sufficient should have been given here to let readers have some idea of the difficulty of collecting the stamps from Japan without the help of a catalogue. Unfortunately we cannot find the dates on the stamps which this country sends out, so it is only by the designs that we can put them in their proper order.

However, this will, we hope, help a considerable amount. One small piece of advice. Do not



The second census
Commemorative



Fuji-Hakone National Park



The Dove of Peace



Japanese Post Offices in
China

Universal Postal Union. There are two designs; one is of Baron Mayeshima, and the second is rather apt, a dove carrying a letter, and the background for this is a map of the world.

At the time it was suggested that the fact that the dove had the corner of the letter which it was carrying in its beak just touching the corner of Australia,

on the four stamps which commemorated the Fuji-Hakone National Park.

The last illustration of the Japanese stamps was issued in 1936, the anniversary of 30 years occupation of Kwantung and shows the Dove of Peace. One cannot help feeling that it requires more than the illustration of this beautiful bird in the Far

leave too many spaces for stamps which you have not got, because the sets are small, as we have already said. So that means that the chance of getting a number of them complete is rather slender.

Also since most of the sets of four stamps consist of two designs it will not make a very great deal of difference if you do not get all the sets together.

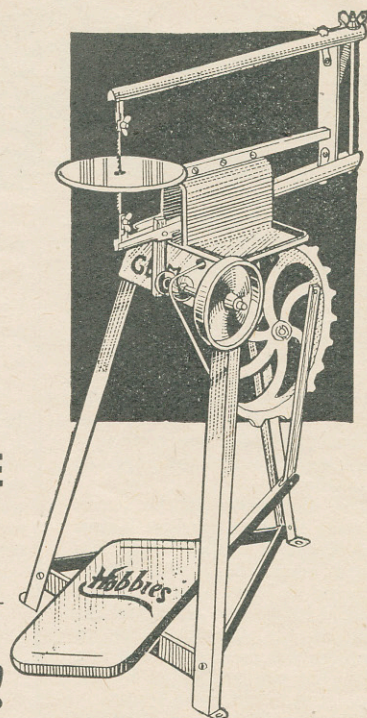
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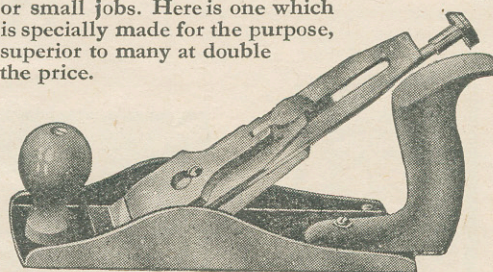
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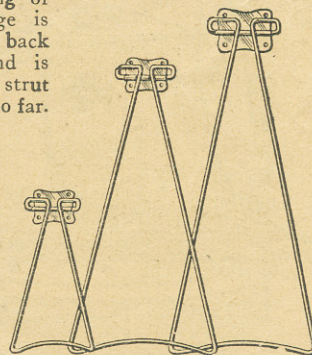
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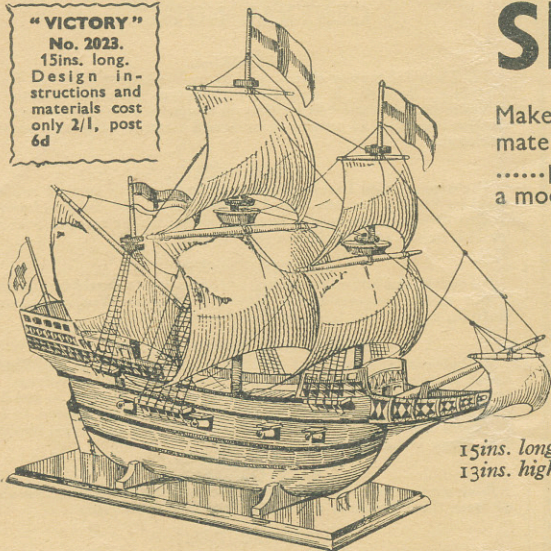
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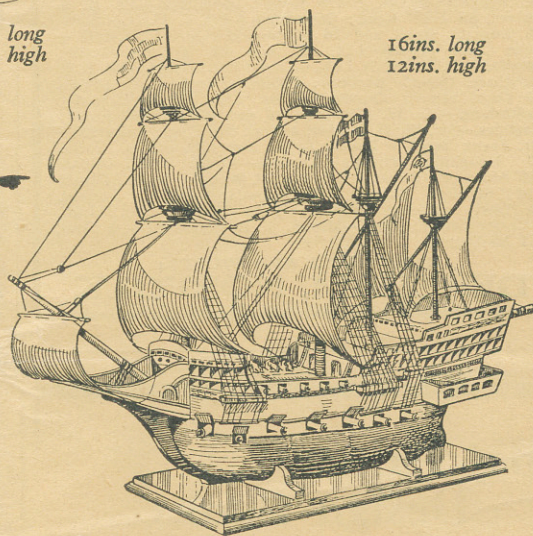
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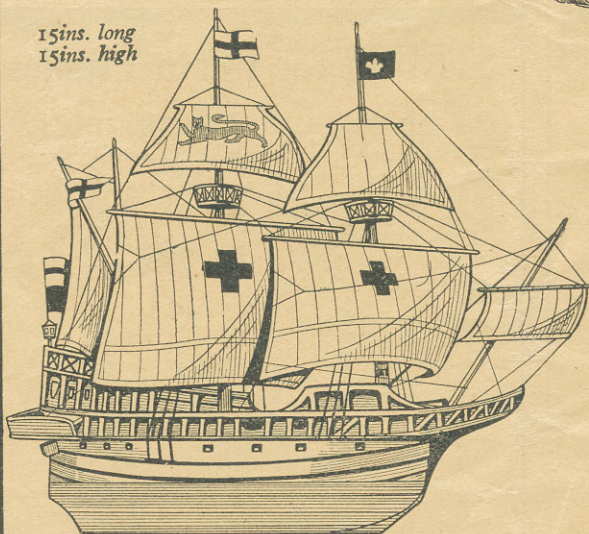


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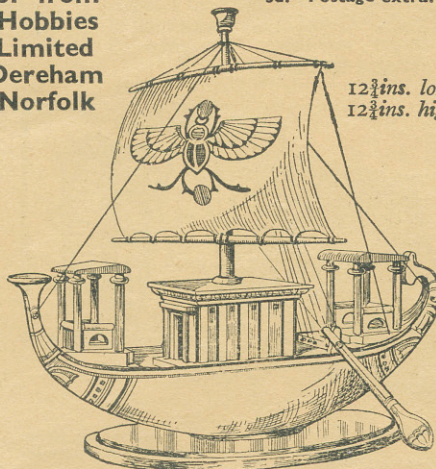
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